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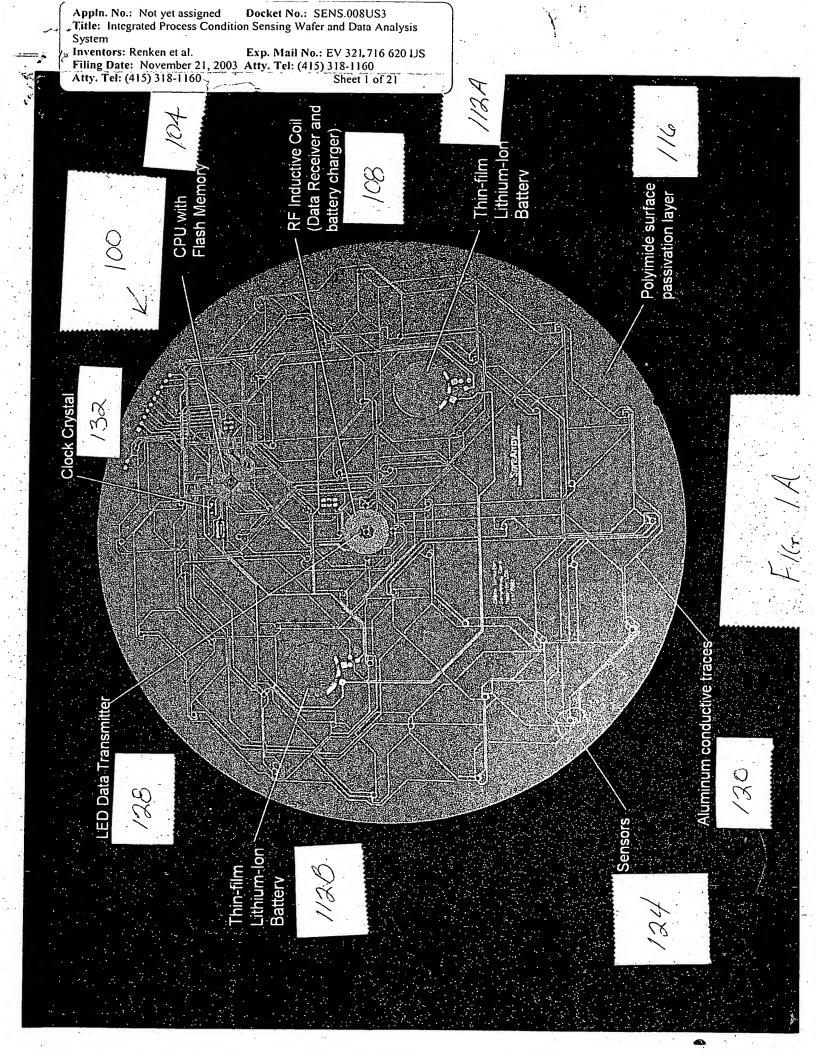
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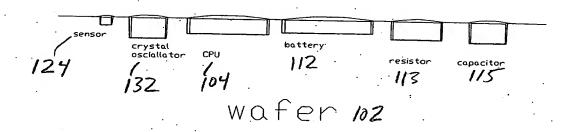


System

Inventors: Renken et al. Exp. Mail No.: EV 321 716 620 US

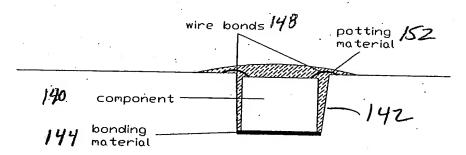
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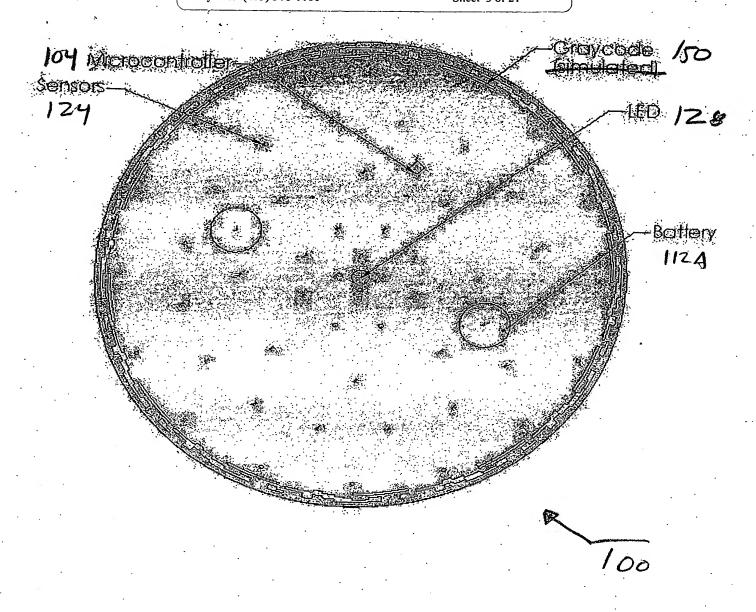
F16. 1B

Components as imbedded in wafer (x and not to scale)



wafer/02

F16 1C Detail of imbedded component (** not to scale) Appln. No.: Not yet assigned Docket No.: SENS.008US3
Title: Integrated Process Condition Sensing Wafer and Data Analysis
System
Inventors: Renken et al. Exp. Mail No.: EV 321 716 620 US
Filing Date: November 21, 2003 Atty. Tel: (415) 318-1160
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System Inventors: Renken et al.

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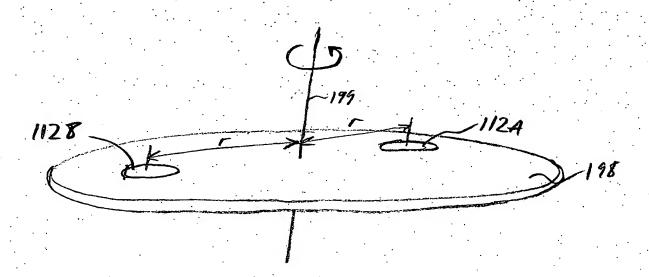
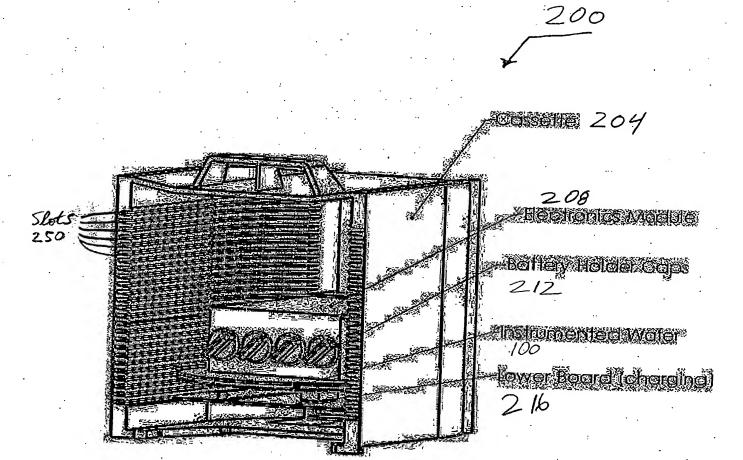


FIG. IE

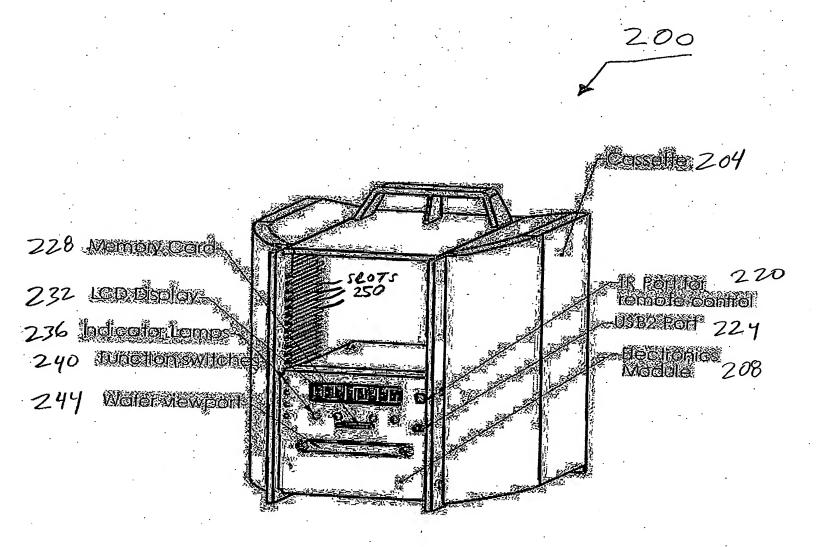
Inventors: Renken et al. • Exp. Mail No.: EV 321 716 620 US Filing Date: November 21, 2003 Atty. Tel: (415) 318-1160
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F16 2A

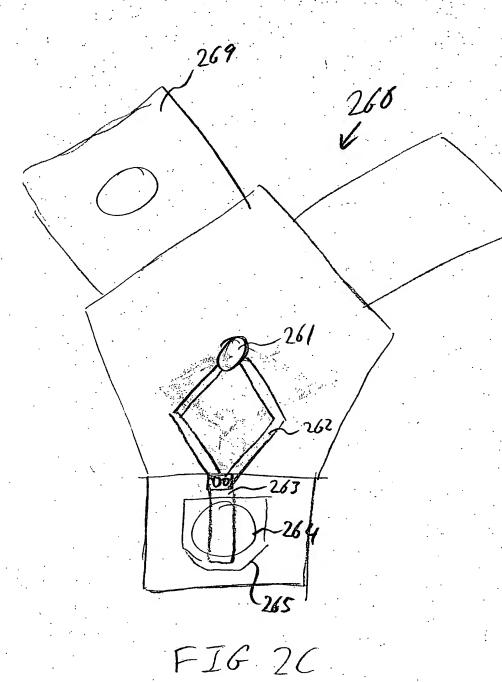
Inventors: Renken et al. Exp. Mail No.: EV 321 716 620 US Filing Date: November 21, 2003 Atty. Tel: (415) 318-1160

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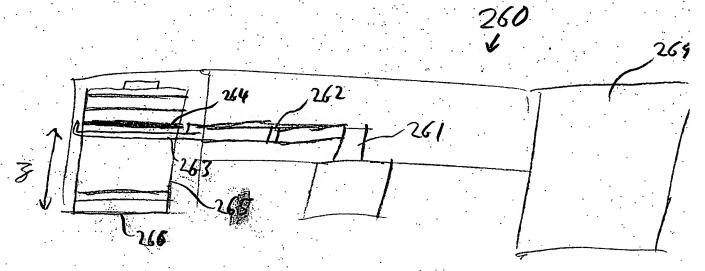


F16. 2B

Inventors: Renken et al. * Exp. Mail No.: EV 321 716 620 US Filing Date: November 21, 2003 Atty. Tel: (415) 318-1160
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System
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320 bond pad 316 polyimide opening (not to. scale) 312 -aluminum 308-silicon nitride 204-silicon oxide wafer 102 Single level metallization F16. 3A bond pad opening (not to scale) 3/6 polyimide 320 -3128 3/0 inter-level dielectric -309 - silicon nitride 312A 304-silicon oxide metal via wafer 102

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Inventors: Renken et al."

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Title: Integrated Process Condition Sensing Wafer and Data Analysis

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Double level metallization

F16. 38

Appln. No.: Not yet assigned Docket No.: SENS.008US3 Title: Integrated Process Condition Sensing Wafer and Data Analysis Inventors: Renken et al. . Exp. Mail No.: EV 321 716 620 US Filing Date: November 21, 2003 Atty. Tel: (415) 318-1160 Atty. Tel: (415) 318-1160 Sheet 10 of 21 FORM INSULATING LAYER 304 ON SUBSTRATE 102 FORM INSULATING 308 ON INSULATING LAMER 304 FORM CONDUCTIVE LATER 312 ON INSULATING LAYER 308 PATTERN AND ETCH ELECTRICAL TRACES IN/ON CONDUCTIVE LAYER 312 FORM PASSIVATION LAYER 316 CONDUTVE LAYER 312 FORM CAVITIES 142 FOZ. COMPONENTS 140 COMPONENTS 140 TO TORACES BOND CONDUCTIVE LAYER 312

412

420

424

428

432. - FORM ADDITION PASSIVATION LATER

(NOT SHOWN) OVER COMPONENTS

140 AND OTHER LATERS

Title: Integrated Process Condition Sensing Wafer and Data Analysis System Inventors: Renken et al. Exp. Mail No.: EV 321 71 Filing Date: November 21, 2003 Atty. Tel: (415) 318-1160 Exp. Mail No.: EV 321 716 620 US Atty. Tel: (415) 318-1160 404 FORM. INSULATING LAYER 304 ON SUBSTRATE 102 FORM INSULATING LAYER 308 ON INSULATING LATER 304 FORM CONDUCTIVE LATER 312 A ON INSULATING LATER DIELECTRIC LAYER 310 CONDUCTIVE LAYER 3RA FORM OPENING FOR VIAS 3/2C IN DIELECTRIC LAYER 310 415-FORM CONOULTIVE LAYER 312B AND VIAS 312C PATTER AND ETCH FLECTEICAL TRACS :416 IN CONDUCTIVE LAKERS 312 A,B 420 -432 SAME AS IN F164A

Appln. No.: Not yet assigned

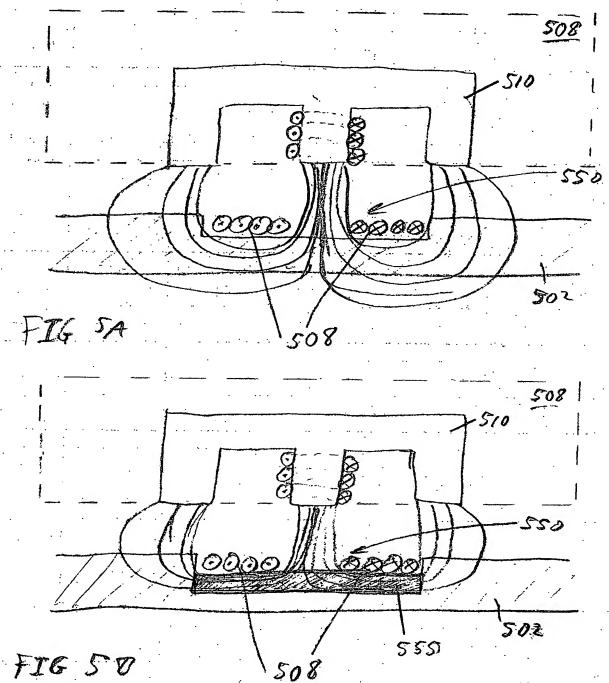
Docket No.: SENS.008US3

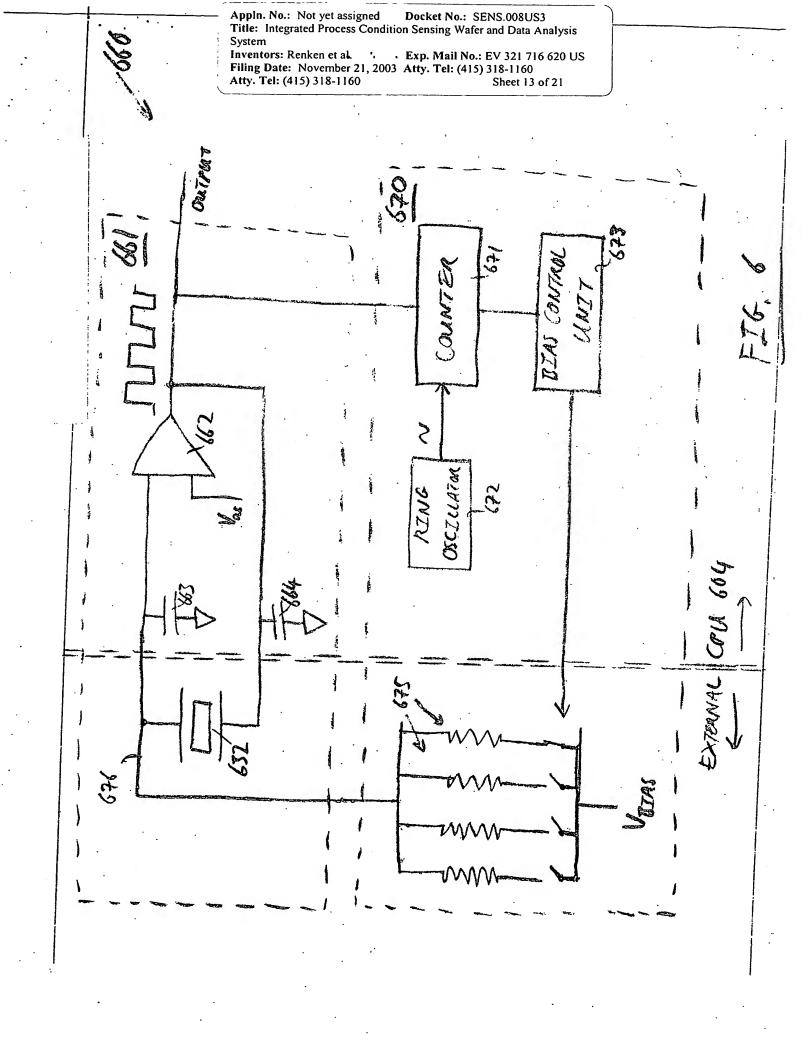
FORM ELECTRICAL AND CHEMICAL

PROTECTIVE SHIELD LATER OVER

ADDITIONAL PASSIVATION LATER

FIG. 48





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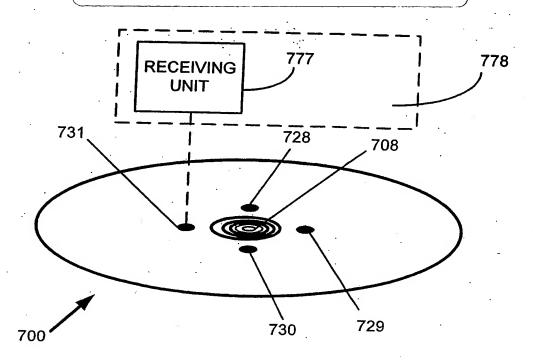


FIG. 7

Inventors: Renken et al.

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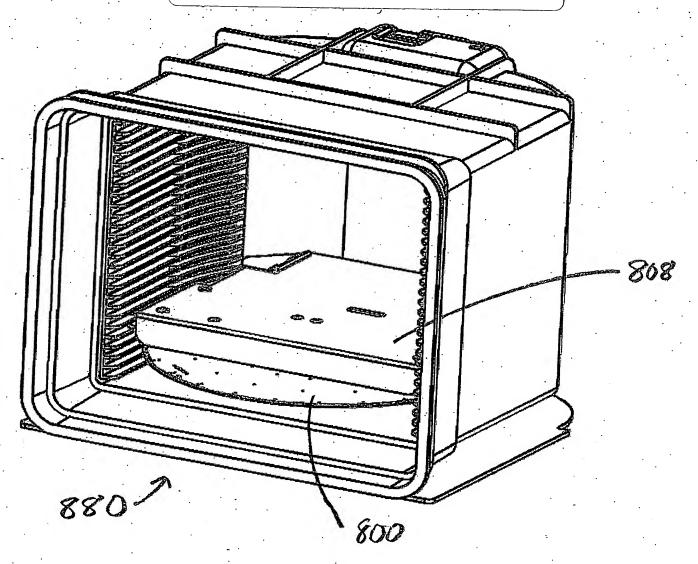
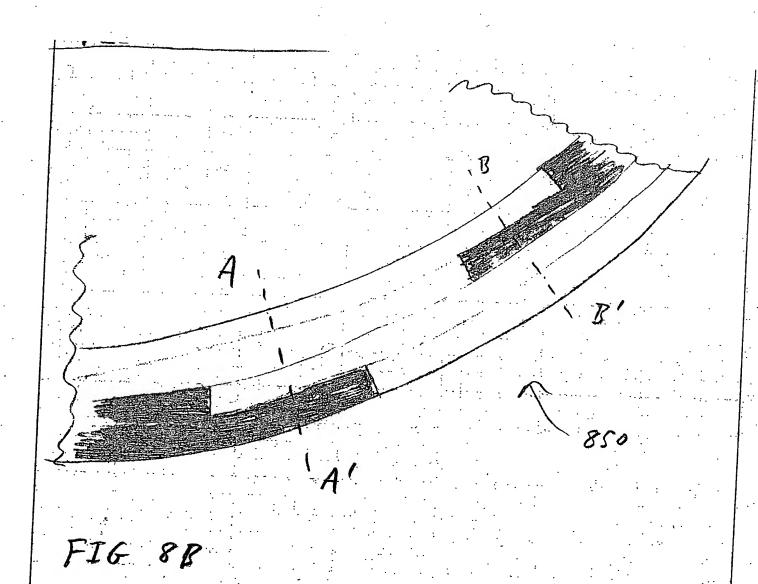


FIG 8A



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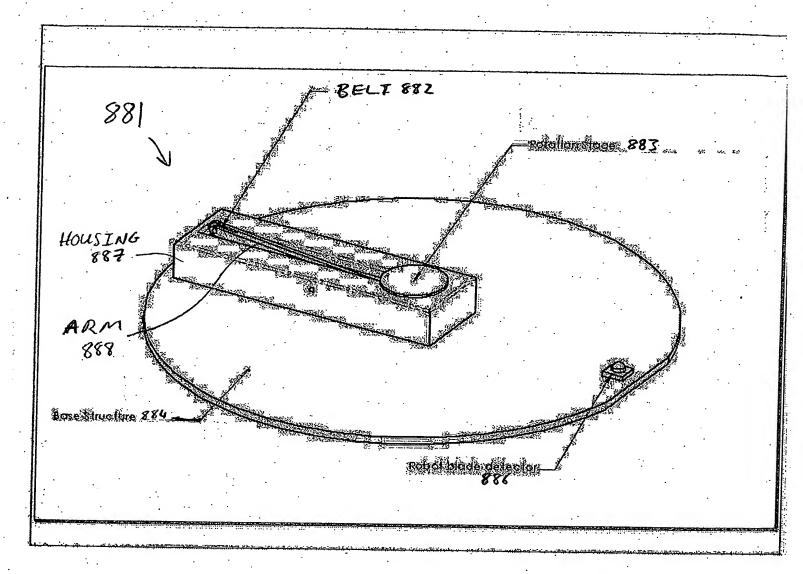
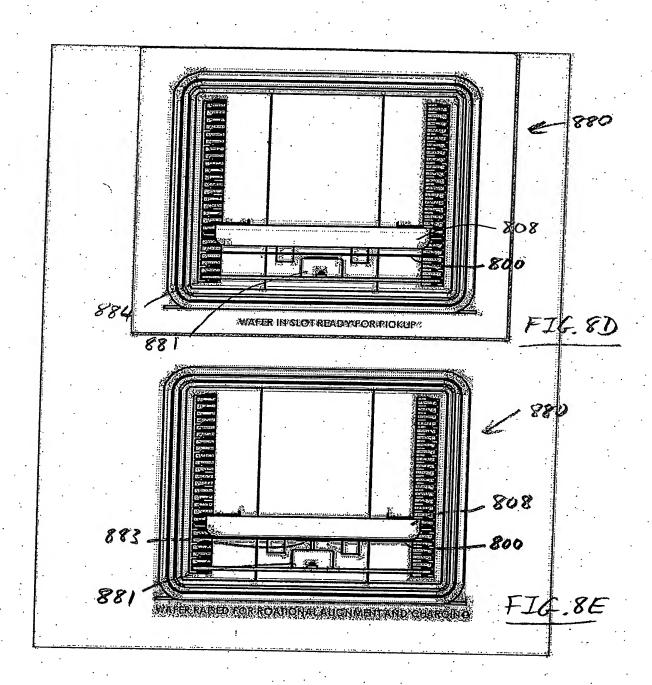


FIG8C

Inventors: Renken et al. v. Exp. Mail No.: EV 321 716 620 US Filing Date: November 21, 2003 Atty. Tel: (415) 318-1160 Sheet 18 of 21 Sheet 18 of 21



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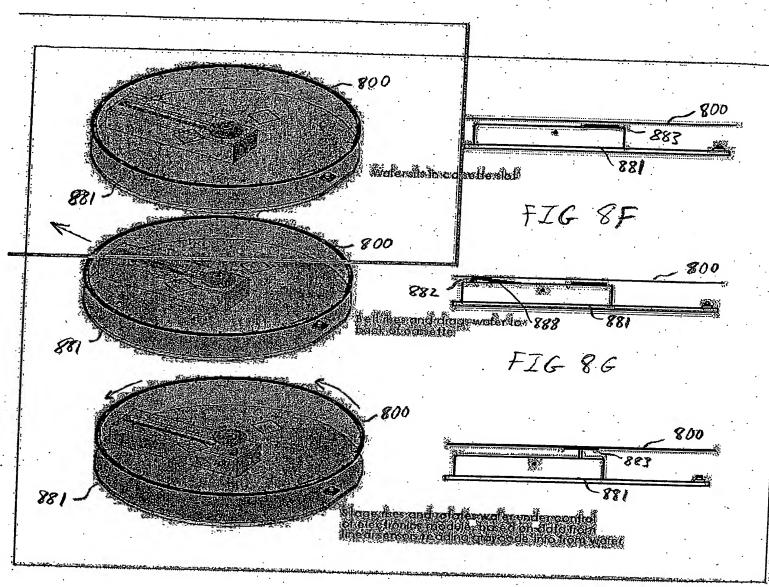


FIG 8H

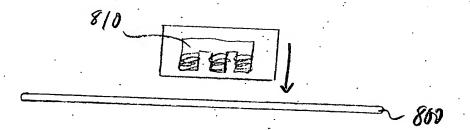


FIG 8I

